Application Number 10/652,672
Amendment dated March 17, 2008
Responsive to Office Action mailed December 17, 2007

REMARKS

This amendment is responsive to the Final Office Action dated December 17, 2007. Applicant has amended claims 1–3, 5, 6, 14, 15, 19–24, 30–32, 34, 35, and 39–42. Applicant has canceled claims 11–13 and 16–18 and added claim 43. Claims 1–10, 14–15, and 19–43 are pending upon entry of this amendment.

Claim Rejection Under 35 U.S.C. § 103

In the Final Office Action, the Examiner rejected claims 1–7, 10, 19–26, and 29–36 under 35 U.S.C. § 103(a) as being unpatentable over Ramankutty et al. (US 6,917,592, *hereinafter* "Ramankutty") in view of Sitaraman et al. (US 7,139,276, *hereinafter* "Sitaraman"). The Examiner also rejected claim 39 under 35 U.S.C. § 103(a) as being unpatentable over Ramankutty in view of Dick et al. (US 2002/0172174, *hereinafter* "Dick"). The Examiner further rejected claims 8, 27, and 37 under 35 U.S.C. § 103(a) as being unpatentable over Ramankutty and Sitaraman in view of Loehndorf, Jr. et al. (US 6,094,437, *hereinafter* "Loehndorf"). Furthermore, the Examiner rejected claims 9, 28, and 38 under 35 U.S.C. § 103(a) as being unpatentable over Ramankutty and Sitaraman in view of Gaddis et al. (US 6,965,937, *hereinafter* "Gaddis"). The Examiner also rejected claims 14 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Ramankutty and Sitaraman in view of Bishara (US 7,120,834, *hereinafter* "Bishara"). Finally, the Examiner rejected claims 40–42 under 35 U.S.C. § 103(a) as being unpatentable over Ramankutty and Dick in view of Sitaraman. Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Applicant has amended the claims to further clarify the features of the invention. Applicant's amended claim 1, for example, requires, in response to authenticating the user, receiving tunnel definitions associated with user information received from the subscriber device. Claim 1 requires that the tunnel definitions define a plurality of preference levels, wherein each preference level specifies a different subset of the plurality of tunnel termination devices.

-13-

Claim 1 further recites selecting a first one of the preference levels defined by the tunnel definitions, selecting a tunnel termination device from the subset of the plurality of tunnel termination devices specified by the first one of the preference levels based on weightings associated with each of the plurality of tunnel termination devices specified by the first preference level, and attempting to establish a network tunnel between the selected tunnel termination device and the access concentrator.

Claim 1 further recites, upon failing to establish the network tunnel, selecting a second one of the preference levels defined by the tunnel definitions, selecting a tunnel termination device from the subset of the plurality of tunnel termination devices specified by the second preference level based on weightings associated with each of the plurality of tunnel termination devices at the second preference level, and establishing a network tunnel between the selected one of the plurality of tunnel termination devices at the second preference level and the access concentrator. None of the applied references, alone or in combination, teach, suggest, or disclose these features.

To aid the Examiner's understanding of the invention as claimed in claim 1, reference is made to the specification at paragraphs [0027]–[0029], [0040]-[0042] and FIG. 4 of the present application, reproduced below, which represents example tunnel definitions.
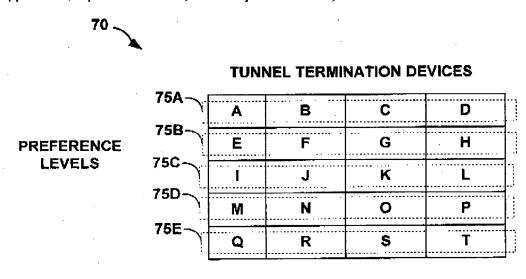
70

TUNNEL TERMINATION DEVICES

A	B	C	D
E	F	G	H
I	J	K	L
M	N	O	P
Q	R	S	T

75A
75B
75C
75D
75E

PREFERENCE LEVELS

FIG. 4

-14-

Application Number 10/652,672
Amendment dated March 17, 2008
Responsive to Office Action mailed December 17, 2007

The specification describes that upon receiving a network access request and user information from a subscriber device at an access concentrator, the access concentrator authenticates that user and retrieves a set of tunnel definitions associated with the received user information. The tunnel definitions for the user define a set of tunnel termination devices with which an L2TP tunnel may be established to support a subscriber session for the subscriber device. The tunnel definitions also define preference levels that each specify a different subset of the available tunnel termination devices. Thus, different user information may be associated with different tunnel definitions, and therefore different preference levels and different corresponding subsets of tunnel termination devices may be defined and prioritized for terminating subscriber session for subscriber devices (e.g., individual users or user domains). The access concentrator attempts to load balance subscriber sessions across the subset of the plurality of tunnel termination devices using the different subsets that are prioritized by that user's preference levels. The access concentrator may therefore load balance the individual subscriber sessions across different subsets of the tunnel termination devices based on the user information that may be specific to each subscriber device or subscriber domain.

The Final Office Action cited Sitaraman, col. 9, ll. 40–45, 50–55 as disclosing tunnel definitions associated with user information that associates each of the plurality of tunnel termination devices with preference levels.[1] The Final Office Action also cited Sitaraman, col. 5, ll. 53–59; col. 6, ll. 52–62, asserting that quality of service (QoS) levels as taught by Sitaraman obviate preference levels as required by Applicant's claims. Applicant respectfully submits, however, that Sitaraman fails to teach, suggest, or disclose preference levels based on user information that each include a plurality of tunnel termination devices as required by Applicant's amended claim 1.

First, Applicant respectfully notes that the preference levels required by Applicant's amended claim 1 are defined by tunnel definitions associated with user information. In contrast, the language of Sitaraman cited by the Final Office Action merely states that the device of Sitaraman can "differentiate among computer users." Sitaraman, col. 9, ll. 39–40. While Sitaraman generally notes the existence of a service level agreement (SLA), Sitaraman fails to teach, suggest, or disclose any form of tunnel definitions associated with user information that

---

[1] Final Office Action dated Dec. 17, 2007, p. 9, ¶ 24, referring to original claim 5.

-15-

defines a plurality of preference levels, let alone tunnel definition wherein each preference level specifies a different subset of the available plurality of tunnel termination devices.

Second, claim 1 as amended requires selecting a tunnel termination device from the subset of the plurality of tunnel termination devices specified by the first one of the preference levels based on weightings. Applicant notes that weightings are applied in selecting one of a plurality of tunnel termination devices from those subset of devices specified at a preference level, and so the preference levels and the specified subset of the devices are distinct from weightings in the requirements of Applicant's amended claim 1. To aid in the Examiner's understanding, Applicant again respectfully directs the Examiner's attention to FIGS. 4 and 5 of Applicant's specification, which generally illustrate a way in which weightings are applied to tunnel termination devices at a particular preference level. Ramankutty in view of Sitaraman fails to teach, suggest, or disclose selecting a preference level having an associated plurality of tunnel termination devices, and selecting one of the associated plurality of tunnel termination devices within the selected preference level based on weightings, as required by Applicant's claim 1.

The Final Office Action cited the use of available bandwidth[2] in Sitaraman, col. 5, ll. 53–59 in support of teaching "preference levels." In addition, the Final Office Action cited the use of available bandwidth in support of the assertion that Sitaraman teaches selecting a tunnel termination device based on weightings.[3] As used in Applicant's amended claim 1, "preference levels" and "weightings" are distinct elements with distinct uses and purposes. Accordingly, the same element of a reference cannot logically teach both of these distinct elements as required by Applicant's amended claim 1.

Moreover, amended claim 1 requires selecting a first preference level and selecting a tunnel termination device from the subset of the plurality of tunnel termination devices specified by the first preference level based on weightings associated with each of the plurality of tunnel termination devices at the first preference level, then selecting a second preference level upon failing to establish the network tunnel. Even if the Examiner's asserted teaching by Sitaraman of "quality of service levels" suggested preference levels, an assertion to which Applicant does not

---

[2] *Id.*
[3] *Id.*, p. 4, ¶ 8.

-16-

acquiesce, Sitaraman does not teach or suggest selecting a second preference level upon failing to establish the network tunnel with a device at the first selected preference level, as required by Applicant's amended claim 1.

Ramankutty likewise fails to teach, suggest, or disclose preference levels as required by Applicant's amended claim 1. As noted above, Applicant's amended claim 1 requires that each preference level specifies a subset of the plurality of tunnel termination devices. Ramankutty, on the other hand, teaches only a single primary LNS and a single peer, backup LNS. Ramankutty therefore fails to teach or suggest a plurality of preference levels that each includes a plurality of tunnel termination devices, as required by Applicant's amended claim 1. Moreover, Ramankutty also provides no teaching or suggestion of receiving tunnel definitions associated with user information received from a subscriber device, wherein the tunnel definitions define the plurality of preference levels and corresponding tunnel termination devices. None of the other cited references teach, suggest, or disclose <u>in response to authenticating the user, receiving tunnel definitions associated with the user information received from the subscriber device, the tunnel definitions defining a plurality of preference levels, wherein each preference level specifies a different subset of the plurality of tunnel termination devices,</u> as required by Applicant's amended claim 1.

For at least the reasons discussed above, the cited references, alone or in combination, fail to teach, suggest, or disclose the requirements of Applicant's claim 1. As Applicant has similarly amended independent claims 19, 30, and 39, the cited references likewise fail to teach, suggest, or disclose the requirements of the independent claims, alone or in combination.

The dependent claims, i.e. claims 2–10, 14–15, 20–29, 31–38, and 40–42 inherit the limitations of the respective independent claims. Therefore, for at least the reasons discussed above, the dependent claims are likewise patentable. Moreover, the dependent claims include a number of limitations that the cited references fail to teach, suggest, or disclose.

For example, Applicant's claim 14 requires determining whether a preference level fail-over setting is enabled upon failing to establish the network tunnel with the selected one of the tunnel termination devices at the first preference level. The Final Office Action correctly noted that Ramankutty and Sitaraman fail to teach, suggest, or disclose the preference level failover setting. However, the Final Office Action cited Bishara in support of the rejection of claim 14.

Bishara, however, does not teach a fail-over setting in the context of establishing a network tunnel.

Instead, Bishara teaches failover for physical ports of a network switch. Bishara, Abstract; col. 8, ll. 4–11. That is, Bishara teaches failover at the physical layer (PHY), or layer 1, of a network. Bishara, col. 7, ll. 2–4. Network tunneling, the context of Applicant's claim 14, occurs at layer five of a network, simulating a layer two process (e.g., the Layer 2 Transport Protocol, which is a session layer (layer 5) protocol that simulates the data link layer, or layer 2, of a network). It is not obvious how one of ordinary skill in the art could apply the teachings of a layer 1 disclosure to a layer 5 protocol. Similarly, it would not be obvious to select a different one of the plurality of tunnel termination devices **at the first preference level** as required by Applicant's amended claim 14.

Moreover, it would not have been obvious, even after a review of the cited references including Bishara, to update the selected preference level to the second preference level upon failing to establish the network tunnel and when the preference level fail-over option is disabled, as required by Applicant's amended claim 15. Bishara, to quite the contrary of the requirements Applicant's amended claim 15, teaches ending when the failover option is disabled. Bishara, col. 8, l. 11. That is, if a connection over a port fails to establish, Bishara teaches sending an alert and ending. Bishara, col. 8, ll. 7–11. Bishara, like the other cited references, fails to teach, suggest, or disclose selecting a different device for connection, such as updating the selected preference level to the second preference level upon failing to establish the network tunnel and when the preference level fail-over option is disabled, as required by Applicant's amended claim 15.

For at least these reasons, the Final Office Action has failed to establish a prima facie case for non-patentability of Applicant's claims 1–10, 14–15, and 19–42 under 35 U.S.C. § 103(a). Applicant therefore respectfully requests withdrawal of this rejection.

-18-

Application Number 10/652,672
Amendment dated March 17, 2008
Responsive to Office Action mailed December 17, 2007

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date: By:

March 17. 2008
SHUMAKER & SIEFFERT, P.A.   Name: Jennifer M.K. Rogers
1625 Radio Drive, Suite 300   Reg. No.: 58,695
Woodbury, Minnesota 55125
Telephone: 651.735.1100
Facsimile: 651.735.1102

-19-